

Exhibit 22

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA

B.P.J. by her next friend and mother,)	
HEATHER JACKSON,)	
<i>Plaintiff,</i>)	Civil Action No. 2:21-cv-00316
v.)	
)	Hon. Joseph R. Goodwin
WEST VIRGINIA STATE BOARD OF)	
EDUCATION, HARRISON COUNTY)	
BOARD OF EDUCATION, WEST)	
VIRGINIA SECONDARY SCHOOL)	
ACTIVITIES COMMISSION, W.)	
CLAYTON BURCH in his official capacity)	
as State Superintendent, DORA STUTLER)	
in her official capacity as Harrison County)	
Superintendent, and THE STATE OF)	
WEST VIRGINIA,)	
)	
<i>Defendants,</i>)	
)	
and)	
)	
LAINY ARMISTEAD,)	
)	
<i>Defendant-</i>)	
<i>Intervenor.</i>)	
)	
)	

DECLARATION AND EXPERT REPORT OF DEANNA ADKINS, MD

1. I have been retained by counsel for Plaintiff as an expert in connection with the above-captioned litigation.

2. I intend to provide my expert opinion on: (1) the nature and impact of treatment protocols for transgender youth; and (2) the different biological characteristics of sex and the ways in which they may not align within a person.

3. I have knowledge of the matters stated in this declaration and expert report and have collected and cite to relevant literature concerning the issues that arise in this litigation in the body of this declaration.

4. In preparing this declaration and expert report, I reviewed the text of House Bill 3293 at issue in this matter. I also relied on my scientific education and training, my research experience, and my knowledge of the scientific literature in the pertinent fields. The materials I have relied upon in preparing this declaration and expert report are the same types of materials that experts in my field of study regularly rely upon when forming opinions on these subjects. I may wish to supplement these opinions or the bases for them as a result of new scientific research or publications or in response to statements and issues that may arise in my area of expertise.

BACKGROUND AND QUALIFICATIONS

5. I received my medical degree from the Medical College of Georgia in 1997. I served as the Fellowship Program Director of Pediatric Endocrinology at Duke University School of Medicine for fourteen years and am currently the Director of the Duke Center for Child and Adolescent Gender Care.

6. I have been licensed to practice medicine in the state of North Carolina since 2001.

7. I have extensive experience working with children with endocrine disorders and I am an expert in the treatment of children with differences or disorders of sex development and in the treatment of children with gender dysphoria.

8. I am a member of the American Academy of Pediatrics, the North Carolina Pediatric Society, the Pediatric Endocrine Society, and The Endocrine Society. I am also a

member of the World Professional Association for Transgender Health (“WPATH”), the leading association of medical and mental health professionals in the treatment of transgender people.

9. I am the founder of the Duke Center for Child and Adolescent Gender Care (“Gender Care Clinic”), which opened in 2015. I currently serve as the director of the clinic. The Gender Care Clinic treats children and adolescents aged 7 through 22 with gender dysphoria and/or differences or disorders of sex development. I had been caring for these patients in my routine practice for many years prior to opening the clinic.

10. I currently treat approximately 400 transgender and intersex young people from North Carolina and across the Southeast at the Gender Care Clinic. I have treated approximately 500 transgender and intersex young people in my career.

11. As part of my practice, I stay familiar with the latest medical science and treatment protocols related to differences or disorders of sex development and gender dysphoria.

12. I am regularly called upon by colleagues to assist with the sex assignment of infants who cannot be classified as male or female at birth due to a range of variables in which sex-related characteristics are not completely aligned as male or female.

13. I have testified twice as an expert at trial or deposition in the past four years.

TREATMENT PROTOCOLS FOR TRANSGENDER PEOPLE

14. A transgender person has a gender identity that differs from the person’s sex assigned at birth.

15. A person’s gender identity refers to a person’s inner sense of belonging to a particular gender, such as male or female. Everyone has a gender identity.

16. Children usually become aware of their gender identity early in life.

17. For some people, their gender identity does not align with the sex they are assigned at birth. This misalignment can create significant distress, known as gender dysphoria, for people with this experience and can be felt in children as young as 2 years old.

18. A person's gender identity (regardless of whether that identity matches other sex-related characteristics) cannot be voluntarily changed, and is not undermined or altered by the existence of other sex-related characteristics that do not align with it.

19. According to the American Psychiatric Association's Diagnostic & Statistical Manual of Mental Disorders ("DSM V"), "gender dysphoria" is the diagnostic term for the condition where clinically significant distress results from the lack of congruence between a person's gender identity and the sex they are designated at birth. In order to be diagnosed with gender dysphoria, the incongruence must have persisted for at least six months and be accompanied by clinically significant distress or impairment in social, occupational, or other important areas of functioning.

20. Gender dysphoria is a serious medical condition that, if left untreated, can result in severe anxiety and depression, self-harm, and suicidality.¹

21. Before receiving treatment, many people with gender dysphoria have high rates of anxiety, depression, and suicidal ideation. I have seen in my patients that without appropriate treatment, this distress impacts every aspect of life.

¹ Spack NP, Edwards-Leeper L, Feldmain HA, et al. Children and adolescents with gender identity disorder referred to a pediatric medical center. *Pediatrics*. 2012; 129(3):418-425. Olson KR, Durwood L, DeMeules M, McLaughlin KA. Mental health of transgender children who are supported in their identities. *Pediatrics*. 2016; 137:1-8.

22. Experiences of discrimination and gender-minority stress associated with rejection and non-affirmation are correlated with suicidal ideation and suicidality, respectively.² The only treatment to avoid this serious harm is to recognize the gender identity of patients with gender dysphoria and follow appropriate treatment protocols to affirm gender identity and alleviate distress.

23. When appropriately treated, gender dysphoria is easily managed. I currently treat hundreds of transgender patients. All of my patients have suffered from persistent gender dysphoria, which has been alleviated through clinically appropriate treatment.

24. The Endocrine Society and the World Professional Association for Transgender Health have published widely accepted standards of care for treating gender dysphoria,³ including the forthcoming Standards of Care Version 8. The precise treatment for gender dysphoria depends on each person's individualized need, and the medical standards of care differ depending on whether the treatment is for a pre-pubertal child, an adolescent, or an adult.

25. The medical treatment for gender dysphoria is to eliminate the clinically significant distress by helping a transgender person live in alignment with their gender identity. This treatment is sometimes referred to as "gender transition," "transition related care," or

² World Prof'l Ass'n for Transgender Health, Standards of Care for the Health of Transsexual, Transgender, and Gender-Nonconforming People, Chapter Draft for Public Comment-Mental Health (8th Version, forthcoming 2022).
<https://www.wpath.org/media/cms/Documents/SOC%20v8/SOC8%20Chapters%20for%20Public%20Comment/SOC8%20Chapter%20Draft%20for%20Public%20Comment%20-%20Mental%20Health.pdf?t=1638409644>

³ Hembree WC, et al. Endocrine treatment of gender-dysphoria/gender incongruent persons: An Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2017; 102: 3869–3903; World Prof'l Ass'n for Transgender Health, Standards of Care for the Health of Transsexual, Transgender, and Gender-Nonconforming People (7th Version, 2011),
https://www.wpath.org/media/cms/Documents/SOC%20v7/SOC%20V7_English2012.pdf?t=1613669341

“gender affirming care.” The American Academy of Pediatrics agrees that this care is safe, effective, and medically necessary for the health and wellbeing of children and adolescents suffering from gender dysphoria.⁴

26. The Endocrine Society Guidelines were developed through rigorous scientific processes which “followed the approach recommended by the Grading of Recommendations, Assessment, Development, and Evaluation group, an international group with expertise in the development and implementation of evidence-based guidelines.” The guidelines affirm that patients with gender dysphoria often must be treated with “a safe and effective hormone regimen that will (1) suppress endogenous sex hormone secretion determined by the person’s genetic/gonadal sex and (2) maintain sex hormone levels within the typical range for the person’s affirmed gender.”

27. Before puberty, treatment does not include any drug or surgical intervention. For this group of patients, treatment is limited to “social transition,” which means allowing a transgender child to live and be socially recognized in accordance with their gender identity. This can include allowing children to wear clothing that aligns with their gender identity, to cut or grow their hair, to use new or different names and pronouns, and to access activities in line with their gender identity instead of the sex assigned to them at birth. Social transition is a critical part of treatment of patients with gender dysphoria of all ages and it is the only treatment for pre-pubertal children. There are no known risks to social transition or to affirming

⁴ Rafferty J, Committee on Psychosocial Aspects of Child and Family Health, Committee on Adolescence and Section on Lesbian, Gay, Bisexual, and Transgender Health and Wellness, *Pediatrics* October 2018; 142(4): 2018-2162.

transgender youth who have been properly diagnosed with gender dysphoria by competent medical providers.

28. It undermines social transition – a critical part of gender dysphoria treatment – to force a person with gender dysphoria to live in a manner that does not align with the person’s gender identity. For example, requiring a girl who is transgender to participate in single-sex activities for boys can be deeply harmful and disruptive to treatment. In the context of activities like athletics, which are typically separated by sex, I know from experience with my patients that it can be extremely harmful for transgender youth to be excluded from the team consistent with their gender identity.

29. For many transgender youth, going through endogenous puberty can cause extreme distress. Puberty blocking treatment allows transgender youth to avoid going through their endogenous puberty thereby avoiding the heightened gender dysphoria and permanent physical changes that puberty would cause.

30. Puberty blocking treatment works by pausing endogenous puberty at whatever stage it is at when the treatment begins. This has the impact of limiting the influence of a person’s endogenous hormones on the body. For example, after the initiation of puberty blocking treatment, a girl who is transgender will experience none of the impacts of testosterone that would be typical if she underwent her full endogenous puberty.

31. When treating a transgender young person, when medically indicated, I prescribe puberty blocking treatment at the Tanner 2 stage of puberty. For girls who are transgender, this means that puberty is put on pause usually around the time that the patient has circulating testosterone at a level of 50 ng/dL or 1.735 nMol/L. If managed appropriately, a patient that undergoes puberty blocking treatment at this stage and then proceeds to gender-affirming

hormone therapy will never have circulating testosterone above what is typical of girls who are not transgender.

32. Under the Endocrine Society Clinical Guidelines, once a transgender youth establishes further maturity and competence to make decisions about additional treatment along with their parent and/or guardian, it may then be medically necessary and appropriate to provide gender-affirming hormone therapy to initiate puberty consistent with gender identity. For girls who are transgender, this means administering both testosterone suppressing treatment as well as estrogen to initiate hormonal puberty consistent with the patient's female gender identity. For boys who are transgender, this means administering testosterone.

33. Hormone therapy and social transition can significantly change a transgender youth's physical appearance. For example, boys who are transgender and treated with puberty blockers and gender affirming hormones will receive the same amount of testosterone during puberty that non-transgender boys generate with their testes. They will grow darker and thicker facial and body hair, experience fat distribution away from the hips, have decreased breast growth, and develop lower vocal pitch. Likewise, girls who are transgender and treated with puberty blockers and gender affirming hormones will receive the same amount of estrogen during puberty that non-transgender girls generate endogenously. They will develop breast tissue, fat will be distributed to their hips, their skin will soften, and their vocal pitch will not deepen further.

34. Treatment for transgender youth is safe, effective, and essential for their well-being. My patients who receive medically appropriate hormone therapy and who are treated consistent with their gender identity in all aspects of life experience significant improvement in their health.

35. For many patients, social transition and hormone therapy are sufficient forms of treatment for gender dysphoria. Others also need one or more forms of surgical treatment to alleviate gender dysphoria. Boys who are transgender may receive chest reconstruction surgery no earlier than 16. Genital surgery for women and men who are transgender is not performed until the person has reached the age of at least 18. Genital surgery for women who are transgender can result in a vulva and vagina—external genitalia typical of women—as well as removal of the testes, which eliminates the need for medical testosterone suppression. Because surgery does not produce ovaries, women who are transgender who have had this form of surgery typically continue to need estrogen therapy.

36. Consistent with extensive research literature, my clinical experience with my patients has been that they suffer and experience worse health outcomes when they are ostracized from their peers through policies that exclude them from spaces and activities that other girls and boys are able to participate in consistent with gender identity.

SEX ASSIGNMENT AND BIOLOGICAL SEX CHARACTERISTICS

37. HB 3293 requires school athletics to be separated based on “biological sex” defined as “an individual’s physical form as a male or female based solely on the individual’s reproductive biology and genetics at birth.” W. Va. Code §18-2-25d(b)(1). In addition to being counter to medical science, the notion of a singular “biological sex,” is inherently flawed.

38. When a child is born, a sex assignment is usually made based on the infant’s externally visible genitals. This designation is then recorded and usually becomes the sex designation listed on the infant’s birth certificate.

39. Usually, though not always, a person’s gender identity aligns with the sex designation based on the person’s genitals at birth.

40. For people who are transgender and people with differences of sex development (DSDs), however, there is not complete alignment between gender identity and physical sex-related characteristics.

41. Sex-related characteristics include external genitalia, internal reproductive organs, gender identity, chromosomes, and secondary sex characteristics. These biological sex-related characteristics do not always align as completely male or completely female in a single individual. And none of these characteristics exists in a binary. As the Endocrine Society guidelines explain, the terms “[b]iological sex, biological male or female . . . are imprecise and should be avoided.” Generally speaking, “[t]hese terms refer to physical aspects of maleness and femaleness [but] these may not be in line with each other (e.g., a person with XY chromosomes may have female-appearing genitalia).”⁵

42. Although we generally label infants as “male” or “female” based on observing their external genitalia at birth, external genitalia are not always clearly identifiable as typically male or typically female. And external genitalia do not account for the full spectrum of sex-related characteristics nor are they alone a proxy for how we understand sex.

⁵ Hembree, Wiley C., et al., Endocrine Treatment of Gender-Dysphoric/Gender-Incongruent Persons: An Endocrine Society Clinical Practice Guideline, *J Clin Endocrinol Metab*, Vol. 102, Issue 11, 1 November 2017, 3869–3903.; Berenbaum S., et al., Effects on gender identity of prenatal androgens and genital appearance: Evidence from girls with congenital adrenal hyperplasia. *J Clin Endocrinol Metab* 2003; 88(3): 1102-6; Dittmann R, et al., Congenital adrenalhyperplasia. I: Gender-related behavior and attitudes in female patients and sisters. *Psychoneuroendocrinology* 1990; 15(5-6): 401-20; Cohen-Kettenis P. Gender change in 46,XYpersons with 5alpha-reductase-2 deficiency and 17beta-hydroxysteroid dehydrogenase-3 deficiency. *Arch Sex Behav* 2005; 34(4): 399-410; Reiner W, Gearhart J. Discordant sexual identity in some genetic males with cloacal exstrophy assigned to female sex at birth. *N Engl J Med* 2004; 350(4): 333-41.

43. In one out of every 1,000 live births, the infant's genitals are not typically male or female.

44. For people with DSDs, sex assignment at birth can involve the evaluation of the chromosomes, the external genitalia, the internal genitalia, hormonal levels, and sometimes, specific genes. There are also cases in which the appearance of the external genitalia can change at puberty as well as variations in the appearance of secondary sex characteristics that may signal a difference in sex development in a person.

45. When assignment of sex of an infant with a DSD is made at birth, that assignment is temporary until the individual can express their gender identity. In cases where the initial designation was incorrect, appropriate medical protocols instruct that the sex should be updated to align with the individual's gender identity. Similarly, if the sex designation of an infant without a DSD turns out to be inconsistent with the individual's gender identity, as for transgender people, the sex should be updated to align with the individual's gender identity.

46. Where surgery has been done on children with DSDs before the child's understanding and expression of their gender identity, significant distress can result. Many of these children have had to endure further surgeries to reverse earlier surgical intervention because their gender identity did not match the initial sex designation.

47. At least one out of every 300 people in the world has an intersex variation, meaning that the person's sex characteristic do not all align as typically male or typically female.

48. Some examples of these variations include:

- a. People with Complete Androgen Insensitivity (CAIS) have 46-XY chromosomes, and internal testes that produce testosterone, but do not have the tissue receptors that respond to testosterone or other androgens. The body,

therefore, does not develop a penis, thicker facial hair, or other secondary sex characteristics more commonly associated with men. At birth, based on the appearance of the external genitalia, people with CAIS are generally assigned female. If their testes are left in place, the body will convert the hormones into estrogen. Many do not find out they have XY chromosomes or testes until they do not start menstruating at the expected age.

- b. Androgen Insensitivity can also be partial (known as PAIS). People with PAIS have XY chromosomes, testes, and some (but still lower than typical) response to testosterone. They may be born with genitals that appear like a typical penis, a typical vulva, or somewhere in between.
- c. People with Swyer Syndrome have XY chromosomes and “streak” gonads (gonadal tissue that did not develop into testes or ovaries). Externally, a child with Swyer Syndrome usually develops a vulva. Because their gonads do not produce hormones, they will not develop most secondary sex characteristics without hormone treatment.
- d. People with Klinefelter Syndrome have 47,XXY chromosomes and internal and external genitalia typically associated with males, however, their testicles may have reduced testosterone production. This may lead to breast development, low muscle mass and body hair, and infertility.
- e. People with Turner Syndrome have 45,XO chromosomes which means they have one fewer copy of the X chromosome than expected. In utero, they form sex characteristics typically associated with females, including internal structures like a uterus and fallopian tubes, but the ovaries may degenerate

before birth (or in some cases, not until young adulthood), leading to an inability to make estrogen. Many people with Turner Syndrome will not go through puberty without hormone therapy.

- f. People with Mosaicism have different sets of chromosomes in different cells. Mosaic karyotypes happen as a result of atypical cell division early in embryonic development and could involve various combinations among XX, XY, XO, XXY, and other chromosome patterns. Configuration of gonadal tissue, genitals, and hormone production and response can all vary.
- g. People with ovotestes (sometimes known as Ovotesticular DSD) have gonads that contain both ovarian and testicular tissue. Their chromosomes may be XX, XY, or Mosaic. Genital appearance at birth can be male-typical, female-typical, or something else.
- h. Congenital Adrenal Hyperplasia (CAH) can occur in people with XX or XY chromosomes. People with CAH and 46,XX chromosomes have ovaries, a uterus, and a higher-than-typical production of androgens in utero that can lead to the development of genital differences at birth – such as an enlarged clitoris that may look like a penis, or the lack of a vaginal opening. CAH can also cause the development of typically masculine features like increased muscle mass and body hair.
- i. People with 5-alpha reductase deficiency (5-ARD) have XY chromosomes, but they have an enzyme deficiency that inhibits conversion of testosterone to dihydrotestosterone (the active form of testosterone) to varying degrees. This can impact genital development, and at birth, people with 5-ARD may have

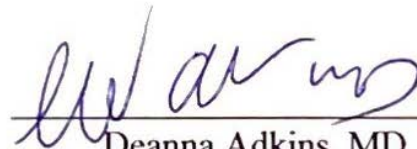
genitals that appear female-typical, neither male-typical nor female-typical, or mostly male-typical with differences like hypospadias (where the urethra is located somewhere other than the tip of the penis). During puberty, hormonal changes allow them to make more dihydrotestosterone, causing the development of some secondary sex characteristics typically associated with males, as well as genital masculinization.

49. As the examples above underscore, from a medical perspective, chromosomes, reproductive anatomy, and endogenous hormones alone do not determine a person's sex, nor does a single sex-related characteristic.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on

1/21/2022


Deanna Adkins, MD

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DUKE UNIVERSITY MEDICAL CENTER

CURRICULUM VITAE

Date Prepared: January 21, 2022

Name:	Deanna Adkins, BS, MD
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Primary Academic Department :	Pediatrics
Secondary Appointment :	n/a
Present Academic Rank and Title :	Associate Professor
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License #:	200100207 NC
Date:	06/29/2022 expires
Specialty Certification(s) and Dates:	10/16/2001-2018 General Pediatrics 8/18/2003 and current-Pediatric Endocrinology
Date of Birth:	06/29/1970
Place:	Albany, GA USA
Citizen of:	USA
Visa Status:	n/a

Education	Institution	Date (Year)	Degree
High School	Tift County High School	1988	Graduated with High Honors
College	Georgia Institute of Technology	1993	BS Applied Biology/Genetics High Honors

Education	Institution	Date (Year)	Degree
Graduate or Professional School	Medical College of Georgia	1997	MD

Professional Training and Academic Career

Institution	Position/Title	Dates
University of North Carolina Hospitals, Chapel Hill, North Carolina	Pediatrics Resident	1997-2000
University of North Carolina Hospitals, Chapel Hill, North Carolina	Pediatric Endocrine Fellow	2000-2004
Duke University Medical Center, Durham, North Carolina	Clinical Associate/Medical Instructor	2004-2008
Duke University Medical Center, Durham, North Carolina	Assistant Professor Track IV	2008-2020
Duke University Medical Center, Durham, North Carolina	Fellowship Program Director Pediatric Endocrinology- Associate PD-	2008-2010 & 2014-12/2019 2010-2014
Duke University Medical Center, Durham, North Carolina	Director Duke Child and Adolescent Gender Care Clinic	July 2015-present
Duke University Medical Center, Durham, North Carolina	Medical Director-Duke Children's Specialty of Raleigh	3/2017-1/2022
Duke University Medical Center, Durham, North Carolina	Associate Professor Pediatrics	1/2020-present
Duke University Medical Center, Durham, North Carolina	Co-Director Duke Sexual and Gender Health and Wellness Program	10/2021-present

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7. M. Hassan Alkazemi, MD, MS, Leigh Nicholl, MS, Ashley W. Johnston, MD, Steven Wolf, MS, Gina-Maria Pomann, PhD, Diane Meglin, MSW, **Deanna Adkins, MD**, Jonathan C. Routh, MD, MPH; Community Perspectives on Difference of Sex Development (DSD) Diagnoses: a Crowdsourced Survey, 2020 Jun;16(3):384.e1-384.e8. doi: 10.1016/j.jpuro.2020.03.023. Epub 2020 Apr 27. PMID: 32409277
8. McGuire H, Frey L, Woodcock LR, Dake E, Carl A, Matthews D, Russell K, **Adkins DA** "Differences in Patient and Parent Informant Reports of Depression and Anxiety Symptoms in a Clinical Sample of Transgender and Gender Diverse Youth" *LGBT Health* 2021-LGBT Health. Aug-Sep 2021;8(6):404-411. doi: 10.1089/lgbt.2020.0478. Epub 2021 Aug 12

Non Author publications

1. Turner DA, Curran ML, Myers A, Hsu DC, Kesselheim JC, Carraccio CL and the Steering Committee of the Subspecialty Pediatrics Investigator Network (SPIN). Validity of Level of Supervision Scales for Assessing Pediatric Fellows on the Common Pediatric Subspecialty Entrustable Professional Activities. *Acad Med*. 2017 Jul 11. doi: 10.1097/ACM.0000000000001820. PMID:28700462
2. Mink R, Carraccio C, High P, Dammann C, McGann K, Kesselheim J, Herman B. Creating the Subspecialty Pediatrics Investigator Network (SPIN). Creating the Subspecialty Pediatrics Investigator Network Richard Mink, MD, MACM1, Alan Schwartz, PhD2, Carol Carraccio, MD, MA3, Pamela High, MD4, Christiane Dammann, MD5, Kathleen A. McGann, MD6, Jennifer Kesselheim, MD, EdM7, *J Peds* 2018 Jan;192:3-4.e2. PMID: 29246355 DOI: 10.1016/j.jpeds.2017.09.079
3. Erratum 2018. PMID: 29246355 DOI: [10.1016/j.jpeds.2017.09.079](https://doi.org/10.1016/j.jpeds.2017.09.079)
4. Mink RB¹, Myers AL, Turner DA, Carraccio CL. Competencies, Milestones, and a Level of Supervision Scale for Entrustable Professional Activities for Scholarship. *Acad Med*. 2018 Jul 10. doi: 10.1097/ACM.0000000000002353. [Epub ahead of print] PMID: 29995669 DOI:[10.1097/ACM.0000000000002353](https://doi.org/10.1097/ACM.0000000000002353) Mink RB, Schwartz A, Herman BE,

Editorials

- a. Editorial Charlotte News and Observer-“**NC pediatric specialists say HB2 ‘flawed’ and ‘harmful,’ call for repeal**”; April 18, 2016; authors: Deanna

Adkins, Ali Calikoglu, Nina Jain, Michael Freemark, Nancie MacIver, Robert Benjamin, Beth Sandberg, etc.

- b. Editorial Raleigh News and Observer-“**Beverly Gray: Repeal HB2**” May 2016: authors Beverly Gray, Deanna Adkins, Judy Sidenstein, Jonathan Routh, Haywood Brown, Clayton Afonso, William Meyer, Kristen Russell, Caroline Duke, Nancy Zucker, Kevin Weinfurt, Jennifer St. Claire, Angela Annas, Katherine Keitcher

Chapters in Books

1. Endocrinology Chapter writer and editor in **Fetal and Neonatal Physiology for the Advanced Practice Nurse**; Editors: Amy Jnah DNP, NNP-BC, Andrea Nicole Trembath MD, MPH, FAAP. December 21, 2018 ISBN-10 0826157319
2. Chapter in **Dental Clinics of North America Adolescent Oral Health Edition** Understanding and Caring for LGBTQ+ Youth for the Oral Health Care Provider; Authors Joshua Raisin, DDS, Deanna Adkins MD, Scott B. Schwartz, DDS, MPH. 2021
3. Intersex Identity and Gender Assignment; Encyclopedia of Adolescent Health; Editor Brian Eichner, MD; Author Deanna Adkins MD 2021-pending

Selected Abstracts:

1. Redding-Lallinger RC, **Adkins DW**, Gray N: The use of diaries in the study of priapism in sickle cell disease. Poster Abstract in Blood November 2003
2. **Adkins, D.W.** and Calikoglu, A.S.: Delayed puberty due to isolated FSH deficiency in a male. Pediatric Research Suppl. 51: Abstract #690. page 118A, 2004
3. Zeger, M.P.D., **Adkins, D.W.**, White, K., Loechner, K.L.: Opsismodysplasia and Hypophosphatemic Rickets. Pediatric Research Suppl.-from PAS 2005
4. Kellee M. Miller¹, David M. Maahs², **Deanna W. Adkins**³, Sureka Bollepalli⁴, Larry A. Fox⁵, Joanne M. Hathway⁶, Andrea K. Steck², Roy W. Beck¹ and Maria J. Redondo⁷ for the T1D Exchange Clinic Network; Twins Concordant for Type 1 Diabetes in the T1D Exchange -poster at ADA scientific sessions 6/2014
5. Laura Page, MD; Benjamin Mouser, MD; Kelly Mason, MD; Richard L. Auten, MD; **Deanna Adkins, MD** CHOLESTEROL SUPPLEMENTATION IN SMITH-LEMLI-OPITZ: A Case of Treatment During Neonatal Critical Illness; - poster 06/2014
6. Lydia Snyder, MD, **Deanna Adkins, MD**, Ali Calikoglu, MD; Celiac Disease and Type 1 Diabetes: Evening of Scholarship UNC Chapel Hill 3/2015 poster
7. **Deanna W. Adkins, MD**, Kristen Russell, LCSW, Dane Whicker, PhD, Nancy Zucker, Ph. D: Departments of Pediatrics and Psychiatry, Duke University Medical Center; Evaluation of Eating Disturbance and Body Image Disturbance in the Trans Youth Population; WPATH International Scientific Meeting June 2016; Amsterdam, The Netherlands
8. Rohit Tejwani, **Deanna Adkins**, Brian J. Young, Muhammad H. Alkazemi, Steven Wolf³, John S. Wiener, J. Todd Purves, and Jonathan C. Routh; Contemporary Demographic and

- Treatment Patterns for Newborns Diagnosed with Disorders of Sex Development; Poster presentation at AUA meeting 2016
9. S.A. Johnson, **D.W. Adkins**, Case Report: The Co-diagnosis of Hypopituitarism with Klinefelter in a patient with short stature; Pediatric Academic Society Meeting 2018
 10. Lapinski J, Dooley R, Russell K, Whicker D, Gray, B, **Adkins DW**; **Title:** Developing a Pediatric Gender Care Clinic at a Major Medical Setting in the South; Workshop Philadelphia Trans Wellness Conference 2018
 11. Jessica Lapinski, DO, Deanna Adkins, MD, Tiffany Covas, MD, MPH, Kristen Russell, MSW, LCSW; An Interdisciplinary Approach to Full Spectrum Transgender Care; WPATH Conference Buenos Aires, Argentina, November 3, 2018
 12. Leigh Spivey, MS, Nancy Zucker, PhD, Erik Severiede, B.S., Kristen Russell, LCSW, Deanna Adkins, MD; USPATH Washington, DC Sept. 2019. Platform presentation; "Psychological Distress Among Clinically Referred Transgender Adolescents: A latent Profile Analysis"

Non-Refereed Publications

- i. Print
 - i. Editorial Charlotte News and Observer-"**NC pediatric specialists say HB2 'flawed' and 'harmful,' call for repeal**"; April 18, 2016
 - ii. Editorial News and Observer-HB2 May 2016 -"**Beverly Gray: Repeal HB2**" May 2016
- ii. Digital
 - i. Supporting and Caring for Transgender Children-HRC guide 2017
 - ii. Initial endocrine workup and referral guidelines for primary care Providers- Pediatric Endocrine Society Education Committee Website Publication
 - iii. Only Human Podcast August 2, 2016;
<https://www.wnycstudios.org/podcasts/onlyhuman/episodes/id-rather-have-living-son-dead-daughter>
- iii. Media and Community Interviews
 - i. Greensboro News and Record Community Forum October 2017-*Transgender Panel Moderator*
 - ii. Playmakers Repertory Company-Chapel Hill: *Draw the Circle* Transgender Community Panel 2017
 - iii. Duke Alumni Magazine
 - iv. Duke Stories
 - v. DukeMed Alumni Magazine
 - vi. NPR Podcast Only Human piece on caring for transgender youth and follow up piece 1 year later
 - vii. ABC11, WRAL, WNCN News Coverage
 - viii. News and Observer: Charlotte and Raleigh
 - ix. Duke Chronicle and Daily Tarheel Article
 - x. Huffington Post Article
 - xi. <https://www.businessinsider.com/the-olympics-uses-testosterone-to-treat-trans-athletes-like-cheaters-2021-7>

- xii. <https://www.wral.com/top-transgender-doctor-warns-teen-treatment-ban-could-be-deadly/19618762/>
- xiii. <http://www.ncpolicywatch.com/2021/04/07/experts-bills-targeting-trans-people-get-the-science-wrong/>

Published Scientific Reviews for Mass Distribution

Position and Background Papers

Other Publications

Editorial Experience

Editorial Boards

Ad Hoc scientific review journals

Hormone Research, Lancet, NC Medical journal, Journal of Pediatrics, Pediatrics, Transgender Health, International Journal of Pediatric Endocrinology, Journal of Adolescent Health

Consultant Appointments

North Carolina Newborn Screening Committee

Human Rights Campaign Transgender Youth Advisory Board

Scholarly Societies

Professional Awards and Special Recognitions

ESPE Fellows Summer School, 2001

NIH Loan Repayment Program Recipient

Lawson Wilkins AstraZeneca Research Fellow,
2003-2004

HEI 2017 Leaders in LGBTQ Healthcare
Equality

Inside Out Durham Appreciation Award

Duke Health System Diversity and Inclusion
Award January 2018

America's Top Doctor's 2020, 2021

Duke Health System Diversity and Inclusion
Award January 2020- CDHD Course Team

Teaching for Equity Fellow 2021

Organizations and Participation

Organization	Role	Dates
American Academy of Pediatrics	Member Council on Information Technology Member Reviewer COCIT Member Section on Endocrinology	1998 to present 2004 to present
Pediatric Endocrine Society	Member Member Education Committee SIG member-Transgender, DSD, liaison to Advocacy SIG Writer Web Publication for Pediatricians	2000 to present
NC Pediatric Society	Member	1998 to present
Endocrine Society	Member	2000 to present
WPATH-International Transgender Society	Member	2014 to present

External Support

<u>Approximate Duration</u>	<u>PI</u>	<u>% Effort</u>	<u>Purpose</u>	<u>Amount Duration</u>
<u>Past</u>	<u>JAEB Center- Deanna Adkins</u>	0.5%	<u>Type 1 diabetes research</u>	<u>\$ 5yr</u>
<u>Past</u>	<u>Josiah Trent Foundation Grant-Deanna Adkins</u>	0.5%	<u>Transgender and eating disorder research</u>	<u>\$5000 3 yr</u>
<u>Pending: Submitted</u>	<u>NIH-Kate Whetten</u>	0.1%	<u>Analysis of TransgenderHealth in Adolescents in Rural Africa, India, and Thailand</u>	<u>Consultant</u>

<u>Approximate Duration</u>	<u>PI</u>	<u>% Effort</u>	<u>Purpose</u>	<u>Amount Duration</u>
<u>Re-Submitting June 2021</u>	<u>NIH R21 Deanna Adkins</u>	2%	Development of New Gender Dysphoria Measures in Youth	<u>Co PI</u>
<u>ReSubmitting June 2021</u>	<u>NIH R21 Sarah Legrand</u>	2%	Glow and Grow	<u>consultant</u>
<u>Submitted November 2020</u>	<u>CMS-Deanna Adkins and Rob Benjamin</u>	1%	<u>Innovations Grant</u>	<u>Co PI</u>
<u>Submitted Sept 2020</u>	<u>Kate Whetten</u>	2%	SAHMSA Grant for development of multidisciplinary LGBTQ education	<u>Co PI</u>
<u>Gifts</u>	<u>Private Family</u>			

Mentoring Activities

Faculty	
Fellows, Doctoral, Post docs	Nancie MacIver-fellow
	Dorothee Newbern-fellow
	Krystal Irizarry-fellow
	Kelly Mason-fellow
	Laura Page-fellow
	Elizabeth Sandberg fellow UNC
	Dane Whicker-psychology post doc Leigh Spivey-psychology post doc Joey Honeycutt, Chaplain Intern Kathryn Blew-research mentor
Residents	Yung-Ping Chin-mentor
	Kristen Moryan-mentor
	Jessica Lapinski-mentor
	Kathryn Blew-research mentor
	Matthew Pizzuto, Briana Scott-Coach, Laura Hampton Coach

Medical students	Tulsi Patel-continuity clinic mentor Sonali Biswas-research mentor 3rd year project Katha Desai-research mentor 3rd year project
Undergraduates	Erik Severeide-Duke University Lindsay Carey-Dickinson College Jeremy Gottlieb-Duke University Jay Zussman-Duke University Beles Abebe-Duke University
High School Students	Aeryn Colton-Intern Apex High School
Graduate Student MBS program	Nicholas Hastings
UNC Gillings School of Public Health MPH students	Lauren Frey, Emily Dake, Alexandra Carle, Lindsay Woodcock, Hunter McGuire
Nurse Practitioners	ECU, Duke-multiple
DNP candidates	Ethan Cicero-PhD committee member Amanda Lund-PhD committee member
Pediatric Dental Fellow UNC	Joshua Raisin-research associate

Education / Teaching Activities

Didactic classes

High School

- c. Cary Academy: Work Experience Program 2021

Undergraduate

1. Creating Excellence and Ambulatory Nursing 2008
2. Profile in Sexuality Research Series at Duke CGSD 2016
3. Duke School of Nursing BSN Course on Sexual and Gender Health guest lecturer: fall 2017, spring 2018, fall 2018, spring 2019, fall 2019, spring 2020, fall 2020, spring 2021, fall 2021
4. Duke School of Nursing Lecture on Transgender Care-recorded for reuse
5. Duke Physician Assistant Program guest lecturer; fall 2017, spring 2018
6. Duke Global Health Course guest lecturer fall 2016
7. Duke Neuroscience course on Gender and Sex guest lecturer fall 2016
8. Duke Ethics Interest group guest lecturer fall 2018, 2020
9. Duke EMS group lecture fall 2018
10. Duke Physician Assistant Program LGBTQ+ Rotation Educator 2019 to present
11. Global Health Sexual and Gender Minority Seminar Lecturer 2020

UME:

1. Cultural Determinants of Health and Health Disparities Course: Facilitator and developed one class; 2017-18 and 2018-19, 2019-20, 2020-21, 2021-22; Steering Committee member for course development
2. UNC School of Medicine Lecturer for LGBTQ Health series 2016-recorded for reuse
3. Duke Pediatrics Interest Group lecture Nov 2020
4. Duke Med Pediatrics Interest Group lecture fall 2018, 2020
5. Lecturer Body and Disease Course MS1 2019, 2020, 2021 Clinical Correlation Differences of Sex Development
6. Lecturer Body and Disease Course MS1 2020, 2021 Transgender Medicine
7. Lecture on Cancer in Transgender and Intersex Individuals April 14, 2021 Mount Sinai School of Medicine
8. Lecture on Transgender Medicine Univ. of Tenn. Health Science Center School of Medicine May 7, 2021

Graduate School Courses:

1. Master of Biomedical Science Program-guest lecturer on Transgender Medicine fall 2016
2. School of Nursing Graduate Intensive Course Lecturer on Sexual and Gender Health; fall 2017, spring 2018, fall 2018, spring 2019, Fall 2019
3. Fuqua School of Business Med Pride Panel and presentation fall 2017
4. Master of Biomedical Science Program Mentor 2019-2020
5. Endocrinology for Nurse Practitioners Duke Neonatal Nurse Practitioner Program August 2021

DUHS Employee Education

1. Annual Duke Human Resources Lunch and Learn on Gender Diversity 2016, 2017, 2018
2. Over 100 lectures across the institution on gender including CHC front desk/nursing staff, hospital wide social work/case management, radiology, PDC clinic front desk/nursing staff
3. Steering Committee for Sexual and Gender Identity Epic Module development and Educational module development
4. DCRI Pride invited speaker
5. Duke Children's staff update 2021

GME:

1. Adult Endocrinology Fellows every year on growth and/or gender
2. Pediatric Residency Noon conferences on Growth and Gender-yearly
3. Reproductive Endocrinology Noon Conferences every 2 to 3 years
4. Psychiatry Noon Conferences periodically
5. Family Practice Noon Conference periodically
6. Pediatric Endocrine Fellow lectures twice a year or more
7. Pediatrics grand rounds: Vitamin D, Type 2 diabetes, Pubertal Development, Gender Diverse Youth

8. Duke Urology Grand Rounds 2016
9. Duke Ob/Gyn Grand Rounds 2017
10. Webinar for Arkansas Children's Hospital on transgender care 2018
11. Reproductive Challenges for Transgender people-Reproductive Endocrinology-2020
12. Metabolic Bone Disease in Neonates-NICU fellows 2019
13. Duke Psychiatry Grand Rounds 2017
14. Duke Pathology Grand Rounds fall 2020
15. Duke Family Medicine Community Rotation Educator 2019 to present
16. NC NAPNAP Symposium Keynote Speaker October 10, 2020
17. Duke Internal Medicine LEADS program speaker; Transgender Care 8/3/2021
18. Equity and Social Justice Webinar: Clinical Advocacy and Care of Transgender and Gender Diverse Youth October 27, 2021Harvard Equity and Social Justice Webinar

Development of Courses Educational programs

1. Pituitary Day October 2019-full day multispecialty seminar for caregivers of patients with hypopituitarism-Organized and developed the curriculum
2. Development of Gender Diversity Education for Health System education
3. Steering Committee for Cultural Determinants and Health Disparities Course
4. Helping to Adapt Resident Coaching Program to Pediatric Fellowships
5. Developed half day course for Duke Student Health on Care of the Gender Diverse Student with multiple disciplines included
6. Course Director: American Diabetes Association Camp Carolina Trails rotation for fellows and residents: 2009, 2011 – 2019
7. Medical Education for Camp Morris 2019, 2021

Development of Assessment Tools and Methods

1. Currently under development with Population Health Sciences-method to assess gender dysphoria; received Brief High Intensity Production (BHIP) grant for this collaboration; NIH grant Submitted March 2020; I am writing the portion of grant giving background on the population and the need for better measures.
2. Collaborating with the Duke Chaplain group to develop a spiritual assessment tool for gender diverse children and their families. Completed 2019

Educational leadership roles

1. Fellowship Program Director Pediatric Endocrinology 2008-2019
2. Course Director: American Diabetes Association Camp Carolina Trails rotation for fellows and residents: 2009, 2011 to 2019

Educational Research

1. Working with coaching program for residents modified and applied in pediatric fellows
2. Worked with the Council on Pediatric Subspecialties EPA study

Invited Lectures and Presentations

1. NC Peds Conference: Pubertal Development 2016

2. Trent Center for Ethics Lecture May 2017: Transgender Medicine: a Wealth of Ethical Issues
3. Visiting Professorship: ECU Brody School of Medicine Invited Professor October 2017
4. College of Diplomates-pediatric dentistry society-Webinar on transgender care 4/1/2020
5. NAPNAP keynote speaker Annual Meeting October 2020
6. Wake County Duke CME program: Type 2 diabetes treatments in pediatrics 2019
7. Lecture on Cancer in Transgender and Intersex Individuals April 14, 2021 Mount Sinai School of Medicine
8. Lecture on Transgender Medicine Univ. of Tenn. Health Science Center School of Medicine May 7, 2021
9. Equity and Social Justice Webinar: Clinical Advocacy and Care of Transgender and Gender Diverse Youth October 27, 2021 Harvard Equity and Social Justice Webinar

International Meetings

1. WPATH Amsterdam 2016
2. WPATH Buenos Aires 2018

National Scientific Meetings (invited)

1. Transgender SIG Developing a Patient Registry
2. Patient Advocacy for Transgender Youth Philadelphia 2018

Instructional Courses, Workshops, Symposiums (National)

1. Time to Thrive Arkansas Children's Hospital April 2018
2. National Transgender Health Summit UCSF Jan 2018: Providers as Advocates Workshop
3. Magic Foundation-Chicago, IL Annual Speaker on Precocious Puberty, Adrenal Insufficiency, and Growth Hormone at National Conference 2016, 2017, 2019, 2020, 2021
4. The Seminar-Fort Lauderdale, FL Invited Speaker on Care of Transgender Youth 2017

Regional Presentations and Posters

- a. North Carolina Pediatric Society: Pubertal Development Presentation—Pinehurst, NC 2017
- b. North Carolina Psychiatric Association: Caring for Transgender Children Presentation and Workshop on key concepts in care of transgender child-Asheville, NC 2017
- c. ECU Campus Health Presentation Caring for Transgender Patients 2018
- d. Radiology Technology Symposium Presentation on Caring for Transgender Patients 2018
- e. Duke CME in Wake County-Update on Type 2 Diabetes Treatments Feb 2019
- f. Hilton Head Pediatric CME Course-Update on Type 2 Diabetes, Short Stature, and Caring for Transgender Patients June 2019
- g. Wake County Duke Pediatrics CME Type 2 diabetes treatments Feb 2019
- h. NAPNAP Annual Meeting Keynote Speaker 2020

- i. Sexual and Gender Minorities Research Symposium Duke Feb 2020; speaker and organizer

Local Presentations

1. Grand Rounds: 2016 to present-Duke Pediatrics twice, Moses Cones Pediatrics, ECU Ob/Gyn, Duke Ob/Gyn, Duke Psychiatry, Duke Urology, Duke Adult Endocrinology, Duke Pathology
2. Prior to 2016-Rex Grand rounds: Salt and Water balance, New treatments in Pediatric Diabetes, Adrenal Insufficiency, Duke peds grand rounds Bone Health, Type 2 Diabetes Mellitus
3. Duke Women's Weekend 2018 hosted by Duke Alumni Association
4. NCCAN Social Work Training 2016
5. NAPNAP lecture 2016 and 2018 and 2020
6. Profiles in Sexuality Research Presentation at Duke Center for Sexual and Gender Diversity 2017
7. Duke LGBTQ Alumni Weekend Presentation 2017
8. UNC Chapel Hill Campus Health Presentation 2018
9. Duke Student Health Presentation 2017, 2018, 2019 (workshop)

Clinical Activity

1. Duke Consultative Services of Raleigh-2.5 days per week in endocrinology and diabetes
2. Duke Child and Adolescent Gender Care Clinic 1.2 day per week at the CHC
3. Inpatient Consult Service Pediatric Endocrinology 1 week per month

Administrative and Leadership Positions

1. Medical Director Duke Children's and WakeMed Consultative Services of Raleigh
2. Director Duke Child and Adolescent Gender Care Clinic
3. Pediatric Endocrinology Fellowship Program Director 2008-2019

Committees

1. Graduate Medical Education Committee-2008-2019
2. School of Medicine Sexual and Gender Diversity Council 2015 to present
3. Pediatrics Clinical Practice Committee-2015? To present
4. Pediatric Diversity and Inclusion Committee

Community

1. Test proctor local schools
2. Guest lecture GSA multiple years
3. Diabetes Camp over 10 years
4. 100 Women who give a hoot
5. Collaborated to bring "Becoming Johanna" to Duke along with multiple screenings with the director and the lead actor
6. Teddy Bear Hospital volunteer both years